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PROGRAM FOR PARTICIPATION

Municipal Solid & Biomedical Waste Branch
Environmental Protection Division
Ministry of Environment

January 1991

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GARBAGE IS A WASTE!

Garbage. Most of what we throw away is actually a valuable resource, yet British Columbia disposes of about 2.4 million tonnes of municipal solid and biomedical waste every year — almost 2.2 kilograms of waste per day for every person in the province — even though more than half of it can be reused, recycled, or recovered. This rate, typical of all Canadians, makes us the most wasteful people on earth, as shown in the comparison of waste generation rates in Figure 1 below.

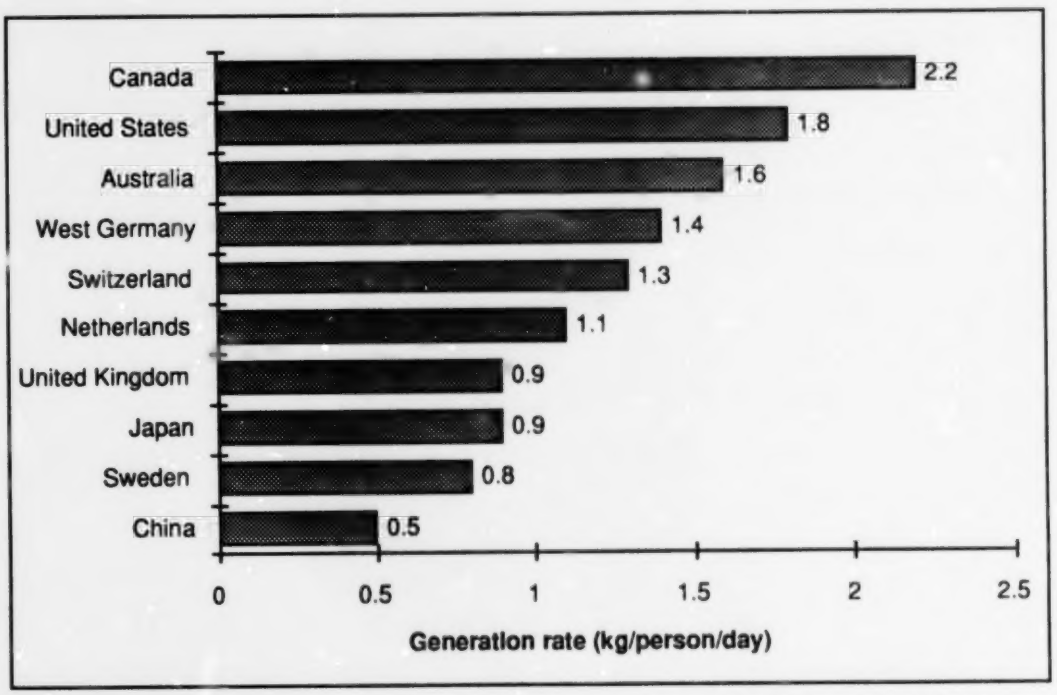

Figure 1: Comparison of solid waste generation rates (kg/person/day).

In the past, most of this waste has been wrongly considered "useless" and has gone to one of our 236 existing landfill sites. This practice has wasted our resources and our money. Landfills waste land which might otherwise be suitable for agriculture, housing or recreation. Without proper design and operation, landfills risk leaching hazardous materials into the groundwater and surface waters, potentially endangering the environment and human health.

British Columbia's waste management problems are most acute in the lower mainland. One half of British Columbia's population is cramped into a very small area between the mountains and the sea. The Greater Vancouver area's rapidly increasing population and high rain fall are putting stress on its safe landfill capacity. Unless the rate of recycling significantly increases, there will be a

shortage of permitted disposal facilities. Waste management costs will also escalate dramatically. The problems now facing Greater Vancouver will be the reality for the rest of British Columbia, unless the entire province changes its habits.

Our past heavy reliance on landfill sites means that landfills have very little future. Approximately 60% of our landfill sites will be filled to capacity by the year 2000. Because only 2% of B.C's land is suitable for use as landfill sites, new, well-located sites are hard to find. The competition for land use is intense and, of course, no one wants a landfill site in their back yard.

Residential waste makes up approximately 45% of the municipal waste stream in British Columbia. The other 55% comes from industrial, commercial, and institutional sources. The estimated composition of the municipal waste stream is shown in Figure 2 below.

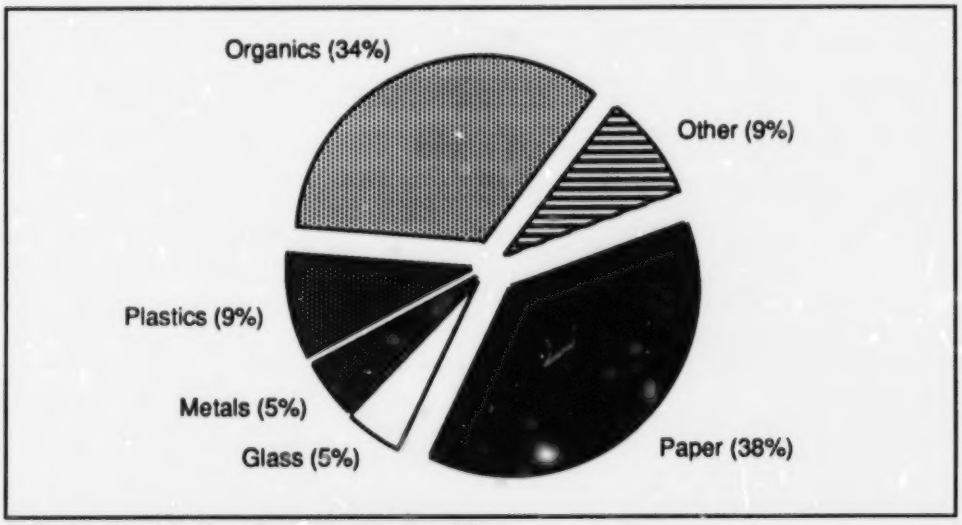

Figure 2: Waste stream composition.

The graph in Figure 3 on the following page shows estimated quantities of waste currently generated and recovered in British Columbia.

Incineration is a possible disposal option, but requires sophisticated emission controls and produces potentially toxic residual ash which has its own disposal problems.

Incineration is currently our primary method of disposing of biomedical wastes. These wastes are just a small part of our garbage glut, but they can cause injury, spread disease, and have toxic impacts if improperly handled. Right now, most of the 5,800 tonnes of biomedical wastes produced each year are burned at

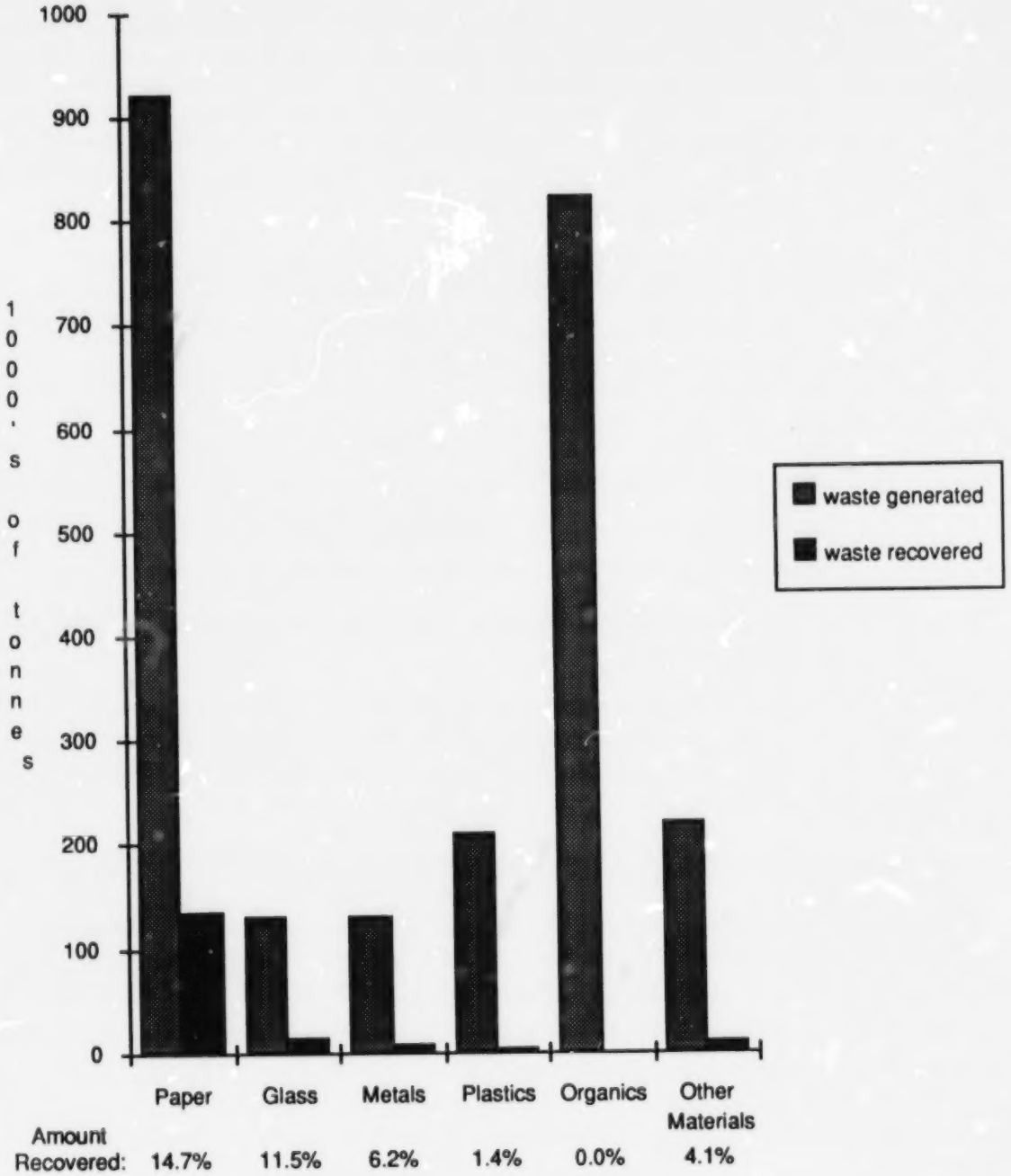

Figure 3: Quantities of waste generated and recovered in B.C.

hospital incinerators. None of these 68 incinerators has any emission control equipment or meet the proposed provincial standards for biomedical waste incinerators. This is unacceptable.

As the population, urban densities and economic activities increase, these serious problems will only worsen unless we are prepared to change. Alternative ways of thinking about waste must be found.

AMBITIOUS GOALS FOR A SUSTAINABLE FUTURE

The Government of British Columbia believes the province's municipal solid and biomedical waste problems must be corrected as quickly and as comprehensively as possible. Our goals are ambitious but attainable:

- To reduce all municipal solid waste by 50% on a per capita basis by the year 2000, with an interim goal of a 30% reduction by 1995.
- To develop environmentally responsible ways of disposal for wastes that cannot be reduced, reused, recycled or recovered.
- To develop a provincial solution for collecting, treating and disposing of biomedical wastes.

These goals have been established after a thorough process of public consultation, research and planning. They are based on the recommendations of the Municipal Solid Waste Management Task Force and the Task Force on Biomedical Waste.

BRITISH COLUMBIA IS MAKING A CHANGE FOR THE BETTER

Across the province, British Columbians are cleaning up their act. Recycling programs are underway in 31 communities and many public groups are doing their best to make progress in waste reduction. In 1986, British Columbia

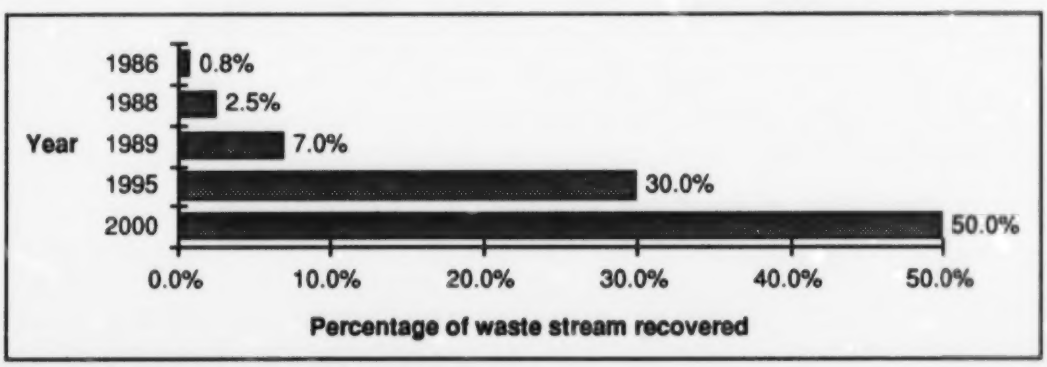

Figure 4: Trends in waste recovery.

recycled only 0.8% of its waste. Now, we recycle 7%. Clearly, we are making progress, but we still have a long way to go to meet our goal of 50% per capita waste reduction by the year 2000. Historical and projected recovery rates in British Columbia are shown in Figure 4 (Previous Page).

COMMITMENT TO THE FUTURE

In September, 1989, the Government announced the five-year, $150 million **Municipal Solid Waste Management Strategy** at the annual meeting of the Union of British Columbia Municipalities.

This strategy is based on a five-part framework which includes:

- **Funding** to support all aspects of municipal solid waste management.
- **Market research and development** to encourage the creation and purchase of products that reduce waste.
- **Information** and education programs.
- **Partnership** building between the public, industry and all levels of government.
- **Polluter-pay policies** which will ensure that those who create waste, rather than the government, will bear the ultimate responsibility for the costs of pollution prevention and control measures.

MANAGING WASTE IS A MATTER OF PRIORITY

Successful waste management must be province-wide and comprehensive. To this end, British Columbia has adopted the Three "R's" of Waste Management. The Three "R's" are arranged in a descending order of priority:

- ***Reduce***
  Buying less is a personal choice we all need to make because this is the most effective method of reducing our solid waste. Beginning in the home and at the office, we need to promote conservation measures that use fewer products and less packaging.
- ***Reuse***
  Many materials and containers can be reused just as they are without remanufacturing them. We need to reject the convenience of quick disposal and choose to reuse and repair to make things last longer.

- ***Recycle***
  Many waste materials can be collected and used to manufacture new products. The public can recycle materials such as newspapers, glass and metals by separating out these useful materials prior to collection and by participating in recycling programs sponsored by governments, businesses and public interest groups.

In addition to the traditional Three "R's" of Waste Management, we recognize two further "R's":

- ***Recover***
  After collection, useful materials, and even energy, can be extracted from wastes to maximize the benefits of the waste reduction program.

- ***Residue Management***
  Ultimately, some materials will no longer be reusable or recyclable. These final waste materials must be disposed of in the safest and most efficient manner possible under the highest standards of environmental protection.

WE'LL DO IT TOGETHER

Solving our waste management problems cannot be done in isolation. The full and active participation of the public, recyclers, industry, business, and all levels of government is necessary to initiate, plan and implement change. By undertaking this responsibility — a sixth "R" of waste management — we can all work together to meet our commitment to the future.

This partnership of responsibility gives each participant, or "stakeholder", an important role to play in the long-term success of our waste reduction goals.

The Public

Public demand and support for changes in waste management are crucial to the success of our waste reduction strategy. In fact, the public is providing much of the momentum which is driving the improvements in our waste management strategies. Important aspects of the public's continuing role include:

- Participating in waste reduction programs such as composting, blue box programs and reuse campaigns.

- Purchasing recycled goods, thereby creating consumer demand for recycled products.

- Generating new ideas and ways to reduce, reuse, and recycle.
- Identifying waste management needs.
- Assisting in evaluating and planning waste management alternatives and solutions.

Industry and Business

The private sector is encouraged to participate in finding solutions to municipal solid waste management problems by:

- Reducing waste at the source through better stewardship of resources and by taking responsibility for the materials they use and the waste they create.
- Designing products and packaging for reuse and recycling.
- Initiating and participating in recycling programs such as deposit/refund systems.
- Making voluntary contributions to help fund collection and recycling programs and facilities.
- Participating in waste exchanges.
- Developing procurement policies which favour the purchase of recycled materials.

Local Governments

The regional districts throughout British Columbia are now at work developing long-term waste management plans. These plans, which are to be completed by the end of 1995, will:

- Identify the general objectives and specific solid waste stream targets of the plan.
- Provide all implementation details such as scheduling, legislative and financial requirements, impact studies, and contingency plans.
- Outline the necessary mechanisms for evaluating the plan's effectiveness.

Local governments will also:

- Develop procurement policies which favour the purchase of recycled materials.
- Develop and coordinate blue box recycling programs.
- Develop composting programs.

The Provincial Government

The Government of British Columbia is taking immediate action to address our waste management problems. Through its comprehensive, province-wide strategy, the Provincial Government is:

- Setting an example through procurement policies and waste reduction measures.
- Establishing and enforcing high standards of waste management.
- Developing and implementing waste management strategies and programs which promote alternatives to landfill use.
- Providing funding for alternative programs, waste reuse, recycling and recovery facilities.
- Providing public education and communication programs which will inform the public about waste management issues and educate them about their role in minimizing waste.
- Providing financial and regulatory incentives or assistance for developing new waste management technologies.
- Assisting in the development of markets for the recycling industry to ensure sustainable waste reduction.

PROGRESS IS ALREADY BEING MADE

Legislation

- A Biomedical Waste Management Plan must be submitted by each Regional District by the end of 1992.
- A Waste Management Plan must be submitted by each Regional

District by the end of 1995. These plans will identify objectives and targets, provide implementation details and outline mechanisms for evaluating the plan.

- Polluter-pay legislation which taxes tires and lead acid batteries and removes the tax exemption from disposable diapers has been passed. Money raised through these "Green Taxes" are being placed in the Sustainable Environment Fund which will be used to fund waste management programs.
- Proposed changes to the Federal Transportation of Dangerous Goods Act include biomedical wastes as dangerous goods and make biomedical wastes subject to this legislation.
- Amendments to the Waste Management Act give the Provincial Government power to:
    - Regulate the storage of designate recyclable materials.
    - Regulate biomedical waste.
    - Designate and define biomedical waste.
    - Prescribe requirements for the treatment, control, and disposal of biomedical waste.
    - Set out requirements for licensing the transportation of biomedical waste.

Organization

The Municipal Solid and Biomedical Waste Branch of the Environmental Protection Devision of the Ministry of Environment was established in October 1989 to develop and implement the Municipal Solid Waste Management Strategy of the Provincial Government. This Branch coordinates the various efforts of the public, industry and business, and local governments as they work together toward the provincial goal of 50% waste reduction by the year 2000. Supplying resources and information, providing financial assistance or incentives for waste reduction programs, and providing planning and financial assistance to develop environmental industries and markets are all part of the

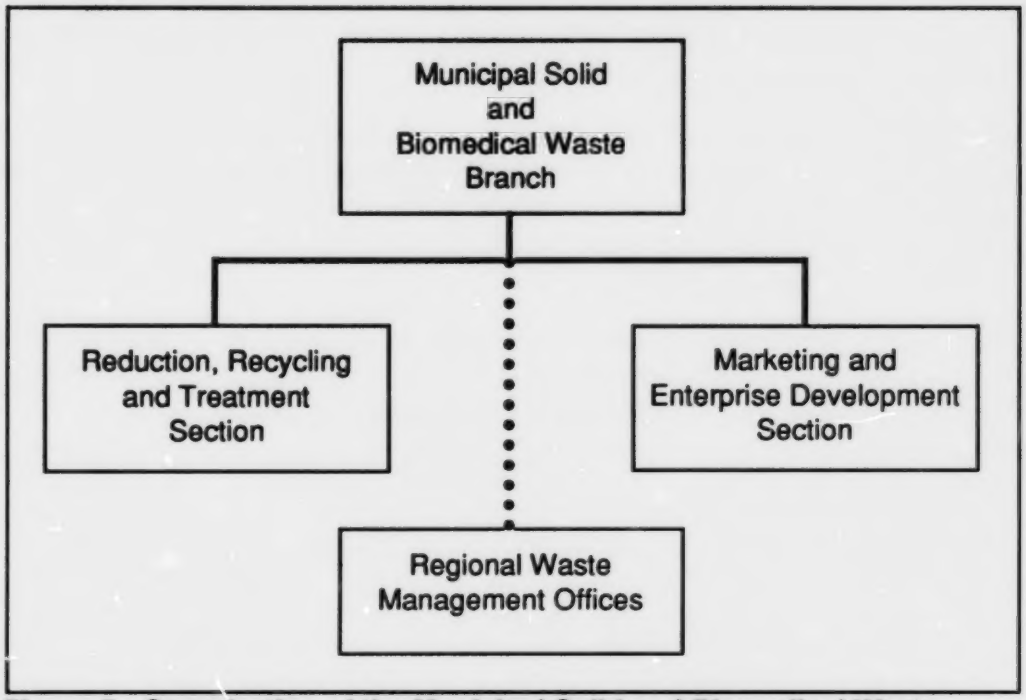

Figure 5: Organization of the Municipal Solid and Biomedical Waste Branch.

Branch's pro-active mandate to work in full partnership with the public, local governments and private sectors to reduce waste. The Branch also has the legislative and monitoring authority to force compliance with its strategies if this becomes necessary.

The Branch is composed of a Reduction, Recycling and Treatment Section, and a Marketing and Enterprise Development Section. At present, the Municipal Solid and Biomedical Waste Branch employs 12 full-time staff in Victoria. The regional representatives will be available to regional districts for the development of their Solid Waste Management Plans. The Branch organization is illustrated in Figure 5 above.

Funding

- $150 million has been committed to the five-year Municipal Solid Waste Management Strategy.
- The Provincial Government has established the Sustainable Environment Fund to finance such initiatives as:
    - Improving the blue box recycling program.

- Developing new environmental industries.
- Providing financial assistance to the regional districts to help develop their waste management plans.

Revenues in the fund will come from environmental "Green Taxes" and voluntary contributions. Voluntary contributions to the Sustainable Environment Fund will be encouraged through the development of programs aimed at developing a partnership between those industries which generate wastes and the provincial government.

- Approval has been granted for a $13.64 million expenditure plan for the 1990/91 operating budget. The money will come from the Sustainable Environment Fund and will be disbursed as follows:

Planning and Program Administration	$2,590,000
Province-wide, Multi-material Recycling Program	$1,900,000
"Hard to Dispose of" Waste	$3,150,000
Marketing and Enterprise Development Program	$3,145,000
Rural Area Waste Management Assistance Program	$800,000
Public Education and Information Program	$2,055,000
TOTAL	$13,640,000

- $8 million from the Sustainable Environment Fund has been approved for the development of province-wide, multi-material recycling programs for 1989-91. This money will fund one-third of the capital cost of:
    - Blue box recycling containers for households.
    - Recycling and composting equipment.
    - Apartment and condominium recyclable material storage containers.
    - Rural recycling depot drop-off containers.
- An additional $3 million from the Sustainable Environment Fund has been allotted for demonstration Resource Recovery Plants. One plant is already under construction in Nanaimo and proposals for plants in Chilliwack and Powell River are under consideration.

- The Partnership in Recycling Fund is being established to receive public and industrial contributions toward our $150 million financial commitment to waste reduction.

Partnership with Business

- A market development plan for recyclable materials has been completed and a financial plan was implemented to support environmental industries.
- "Closing the Loop" has been defined as the key to a successful market development plan. This strategy recognizes that a demand must be created for recycled materials if waste reduction is to be sustainable and economically viable. Figure 6 below shows this recycling loop and illustrates the need to increase both the supply of and demand for recycled materials.

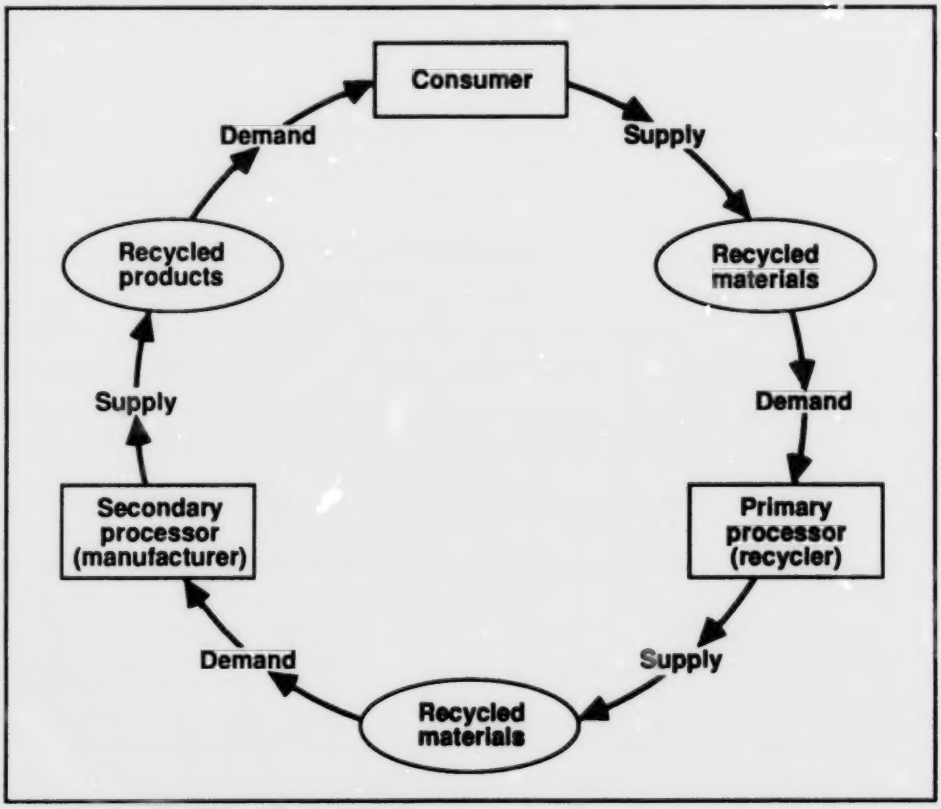

Figure 6: The Recycling Loop.

- A Partners in Recycling Program, illustrated in Figure 7 below, is being established to combine the Government's financial commitment to solid waste reduction with industry's responsibility for the waste their products generate. The partnership is intended to facilitate industry in taking a co-operative role in development of the recycling infrastructure.

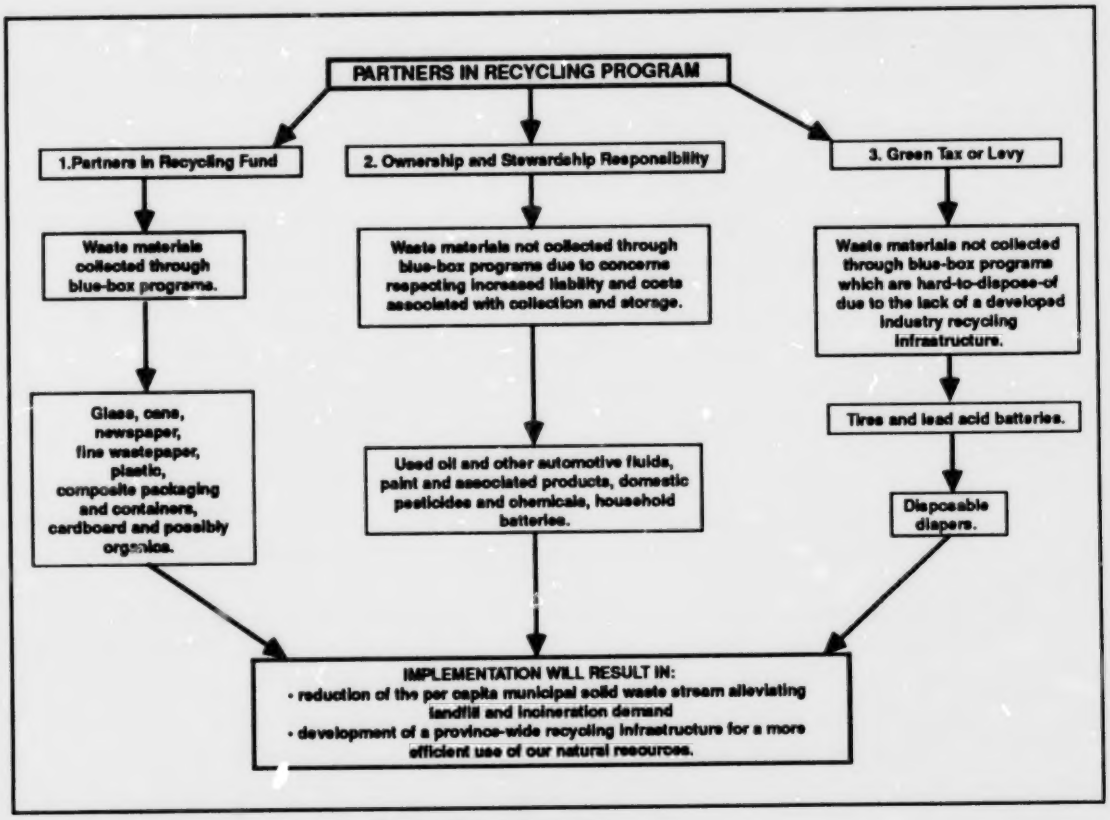
PARTNERS IN RECYCLING PROGRAM
1.Partners in Recycling Fund
2. Ownership and Stewardship Responsibility
3. Green Tax or Levy
Waste materials collected through blue-box programs.
Waste materials not collected through blue-box programs due to concerns respecting increased liability and costs associated with collection and storage.
Waste materials not collected through blue-box programs which are hard-to-dispose-of due to the lack of a developed industry recycling infrastructure.
Glass, cans, newspaper, fine wastepaper, plastic, composite packaging and containers, cardboard and possibly organics.
Used oil and other automotive fluids, paint and associated products, domestic pesticides and chemicals, household batteries.
Tires and lead acid batteries.
Disposable diapers.
IMPLEMENTATION WILL RESULT IN:
• reduction of the per capita municipal solid waste stream alleviating landfill and incineration demand
• development of a province-wide recycling infrastructure for a more efficient use of our natural resources.

Figure 7: Partners in Recycling Program.

This program will consist of initiatives aimed at three different types of recyclable wastes:

- The "Partners in Recycling Fund" for waste collected through blue box programs will include voluntary contributions from industries that produce wastes that are collected in blue boxes. The purpose of the fund is to ensure that industry contributes to the operating costs of blue box programs.
- The "Ownership and Stewardship" approach for wastes that are not being collected through blue box programs due to concerns with

increased liability and costs associated with its collection and storage. This approach to solid waste management is intended to encourage industries whose products generate these wastes to assume responsibility for all costs associated with their collection and recycling.

- The "Green Tax" for wastes that are not being collected through blue box programs due to the lack of a developed recycling industry and are therefore considered hard-to-dispose-of. The Government would prefer that industry take a voluntary approach to developing recycling solutions. However, where an industry does not take such a voluntary initiative, the Government will consider appropriate regulatory measures. To date, levies have been applied to tires and lead-acid batteries, while the tax exemption has been removed from disposable diapers.

- A marketing study has assessed North American and off-continent markets for recyclable materials and identified opportunities for establishing or expanding recycling industries in British Columbia. This summary will be available to the public on request.

- The Provincial Government's Purchasing Commission is implementing procurement policies to promote the use of products containing recycled materials. For example, preference is given to recycled oil and paper.

- A Litter-Free B.C. Committee is being established to assist in the development of programs and in the collection of funding for all effective methods of litter control. The Committee will be made up of senior members of all government levels, businesses, and public groups and will seek the participation of all of these groups in its programs.

Partnership with People

- A provincial Recycling Hotline (toll-free 1-800-667-4321; R-E-C-Y-C-L-E (732-9253) in Greater Vancouver) was established in June 1990 to provide information on where and how to recycle or compost garbage. This 24-hour hotline is staffed during normal business hours and uses a computer-based service at other times. It has received over 10,000 calls since its inception.

- A multi-media public information and education campaign to promote consumer awareness and provide practical help for reducing residential and personal waste was launched during Environment Week in June 1990. Information binders on the programs were distributed to all Regional Districts and municipalities.

Action

- New systems for the collection, processing, and recycling of scrap tires and lead acid batteries will be announced early in 1991.
- A provincial inventory of scrap tires has been completed.
- A provincial solution to biomedical waste collection, treatment and disposal facilities is expected to be announced in Spring, 1991.
- A contract has been issued to prepare a guide for local governments to undertake compostion analysis of their solid waste stream.
- Provincial emission objectives for municipal solid and biomedical waste incinerators have been drafted. These are now being reviewed by local governments and the private sector.
- Criteria for evaluating waste facility and collection/disposal proposals have been finalized.
- A review of landfill objectives is complete and new landfill objectives are being prepared.
- Composting regulations are being prepared.
- A study evaluating the economical and environmental impacts of alternate beverage container recovery systems has been completed and an implementation strategy is being prepared with the affected industries.
- A computer model has been developed to assist local governments with estimating the true cost of landfill disposal.
- Reports presenting options for rural waste management strategies and means to estimate landfill quantities in the absence of weigh scales have been prepared for rural governments.

THE WAY OF THE FUTURE

Legislation

Protecting and improving our environment is everyone's responsibility. Ideally, this will be done with the enthusiastic support and voluntary participation of the public, industry, and all levels of government. However,

new legislation will be necessary to establish guidelines and, if necessary, to enforce compliance with our environmental goals and strategies. New legislation is being considered for:

- Developing mandatory use of post-consumer materials such as recycled paper.
- Initiating additional "Green Taxes".
- Banning selected items from landfills once alternative materials become available or where a market for these items exists. Newspaper, tires, lead acid batteries, and cardboard may be among the materials banned.
- Returning used materials to the point of sale.
- Beverage container recovery systems for implementation in 1991.

Planning and Program Administration

The Municipal Solid Waste Program will be administered by the Municipal Solid and Biomedical Waste Branch of the Ministry of Environment.

- $800,000 is set aside for 1990/91 for Municipal Solid and Biomedical Waste Management Planning Grants. Each of British Columbia's 29 Regional Districts is eligible for a minimum of $10,000, plus an additional $10,000 for each municipality within a regional district boundary, and $1.00/person residing in an electoral area.
- A dynamic data analysis and tracking system is being delveloped to evaluate regional district performance in attaining waste management reduction goals.
- An RFP will be issued to design a user-friendly computer economic model for transfer station and landfill disposal applications.

Province-Wide, Multi-Material Recycling Program

Funding will be available for source separation programs which separate recyclable materials such as glass, metals, newspapers and plastics from the waste stream prior to collection. Funding will assist local governments with start-up and capital costs for promotion and education, and some program operating costs, such as transportation.

"Hard to Dispose Of" Waste Program

Scrap tires, automobile batteries, household dry-cell batteries and disposable diapers will be diverted from the municipal waste stream. New province-wide systems for the collection and recycling of tires and batteries will be announced in early 1991. In the future:

- An RFP will be issued for suggestions on disposable diaper collection and recycling.
- The oil, plastics, and paint industries are examples of those which are developing a stewardship role to control wastes caused by both their manufacturing processes and their products.

Marketing and Enterprise Development Program

- Markets will be developed to provide an end use for recyclable material, thus helping to close the loop between supply and demand. This will create the necessary infrastructure for successful waste reduction.
- Environmental enterprise will be promoted by encouraging industry stewardship policies for waste material and providing funding assistance for industry development, such as a plastics recycling plant.

Rural Area Waste Management

- Rural regions will be encouraged to replace sub-standard refuse sites with a central sanitary landfill site, together with a system of rural transfer stations, to upgrade rural solid waste management practices. The Provincial Government will provide half the capital costs of phasing out the old sites and installing the transfer stations in remote areas or areas of low population density, to a maximum of $30,000 for each transfer station.
- Auto hulks and white goods such as stoves, washers, and refrigerators will be collected from remote areas and moved to central marshalling areas where they will accumulate until quantities make it economically viable to ship them to market for processing. The province's funding formula will pay for up to 50% of the cost of collecting and shipping white goods to the central marshalling areas.

Recyclable Goods Transportaion Program

- The Province recognizes that in some cases recycling programs are burdened with the high costs of transporting collected materials to market.

Accordingly, a financial assistance program is being developed to help such programs offset a portion of their transport costs.

Public Education and Information Program

- A comprehensive public education and information strategy is being developed for both the media and the general public. To date, the program has provided information kits directed toward specific audiences and has initiated a multi-media advertising campaign.
- Classroom materials for use in school curriculum have been developed in conjunction with Science World. Science World was allotted $75,000 for the development of educational materials, such as Discovery Boxes. These materials are available to all provincial school districts.
- British Columbia workplace orientation and continuing education programmes for employees will provide instruction publications on the Governments office waste paper and other resource recovery programmes.
- Manuals for local government on establishing recycling and composting programs will be developed and distributed. A staff member of the Municipal Solid and Biomedical Waste Branch will assist all provincial agencies and other interested groups to develop recycling programs.

Litter Control Program

- A province-wide litter control program is being developed through cooperation with industry and environmental groups. The program will discourage littering through education, widespread distribution of litter receptacles, clean-up programs, and active enforcement of litter control regulations.

National Packaging Task Force

- Funding will be allotted to a nationally coordinated data collection program on packaging, in accordance with the National Packaging Protocol of the Canadian Council of Ministers of the Environment. This is part of the joint Federal/Provincial initiative to reduce the amount of disposable consumer packaging by 50% by the year 2000.

Beverage Container Strategy

- In 1991, two new beverage container recovery systems will be implemented which will make recovery conditions more equitable among the beverage types and broaden the avenues available for return. During the development stages of the modified system, B.C. Environment consulted with public, industrial, and Government stakeholders and commissioned an independent consultant to complete an economic and environmental analysis on a variety of recovery systems.

Province-Wide Recycling Hotline

- The computer-based hotline, established in June 1990, is being operated by the Recycling Council of British Columbia under contract to the Ministry of the Environment.

NO TIME LIKE THE PRESENT

British Columbia is ready to meet the environmental challenge. At no time in the past have we been as well equipped with the knowledge of the environmental issues facing us, the financial commitment to respond effectively, and the will to work together in a partnership of responsibility. With public initiative and support for government leadership, now is the time to begin building a better environmental future for us all.

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